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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,673	09/05/2003	Amos Nussinovitch	85189-5100	2188

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WINSTON & STRAWN LLP  
PATENT DEPARTMENT  
1700 K STREET, N.W.  
WASHINGTON, DC 20006

EXAMINER
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NAFF, DAVID M

ART UNIT	PAPER NUMBER
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1657

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/08/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/657,673

Applicant(s)

NUSSINOVITCH ET AL

Examiner

David M. Naff

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4-16 and 18-43 is/are pending in the application.
- 4a) Of the above claim(s) 22-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-16,18-21 and 41-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 12/11/06
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

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**DETAILED ACTION**

An amendment of 12/11/06 amended claims 1, 2, 4 and 21, added new claims 41-43, and canceled claims 3 and 17.

Claims in the application are 1, 2, 4-16 and 18-43.

5        Claims 22-40 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 3/29/06.

Claims examined on the merits are 1, 2, 4-16, 18-21 and 41-43.

10        The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C.

112:

15        The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

20        Claims 21, 42 and 43 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey  
25        to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification fails to support a bead diameter of "4 mm" as an upper limit of a range with a lower limit of "several microns" as

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recited in claim 21. The specification at page 14, line 10 recites a bead diameter of 2.9 to 3.6 mm.

The specification fails to support a porosity of "about 85.5% to about 07%" in claim 42. Page 19, lines 2-8, and Table 1 on page 8 do not disclose this porosity range.

The specification fails to support "pores separated by pore walls having an average thickness of about 1.47 micrometers to about 11.43 micrometers" in claim 43. The thickness disclosed in the specification at page 19, lines 11-13 and in Table 1, page 20, is not disclosed as being the thickness of walls separating pores. The specification is unclear as to the part of the bead that is the wall having the average wall thicknesses as disclosed by Table 1. Furthermore, the thickness of 1.47 micrometers is for a control. The invention is not the control. The lower thickness limit in the table when a microorganism is present is 1.55 micrometers.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2, 21, 41 and 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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In line 3 of claim 2, "entrapped of the" is confusing. Text is missing.

In claim 21, a the lower limit of "several microns" for the range of "several microns to 4 mm" is uncertain as to meaning and scope  
5 since the number of microns that is several is relative and subjective. Several microns can be 4 mm when several microns is given its broadest interpretation.

The range of "several microns to several hundred microns" in claim 41 is uncertain as to meaning and scope since "several" and  
10 "several hundred" are relative and subjective. Several microns can be the same as several hundred microns when several is given it broadest interpretation. This range does not further limit the range of claim 21 since several hundred microns can be greater than 4 mm, and the range of claim 41 can be broader than the range of claim 21.

15 Claim 43 is unclear by requiring a thickness for walls separating pores since the thickness disclosed in the specification is not

disclosed as being a thickness of walls separating pores.

Furthermore, the thickness of 1.47 microns is for the control, which is not the invention, and this further makes the claim confusing.

20 ***Claim Rejections - 35 USC § 103***

Claims 1, 2, 4-13, 16, 18-21 and 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marosi et al (4,818,530) in view of Sudoma (4,956,295).

The claims are drawn to porous solid cellular hydrocolloid  
25 carriers comprising freeze-dried hydrocolloid beads having a desired

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porosity comprising viable microorganisms entrapped therein, and the freeze-dried beads have a residual moisture content of no more than 20%.

Marois et al disclose dried alginate pellets containing a fungi such as *Trichoderma viride* (Example 13) that controls soilborne diseases. The pellets have been dried to about 10% moisture (col 5, line 13). The pellets can have a diameter of 1-2 mm (col 4, line 18). Fillers and other additives can be present in the pellets (col 4, lines 1-10).

Sudoma discloses (col 5, lines 20-25) freeze drying in the presence of a cryoprotectant to provide a storage stable bacteria composition without being refrigerated (col 3, line 24).

When producing the dried beads of Marois et al, it would have been obvious to use freeze drying and a cryoprotectant as suggested by Sudoma to obtain dried beads stable during storage without refrigeration. The pellets of Marois et al will inherently be porous after freeze-drying as suggested by Sudoma. The conditions of dependent claims are inherent in the pellets of Marois et al, or would have been obvious from conditions disclosed by Marois et al and Sudoma. After freeze-drying, the pellets of Marois et al will inherently have a porosity in the range of claim 42 and a wall thickness for walls between pores in the range of claim 43.

#### **Response to Arguments**

Arguments in the amendment urge that there is no teaching in Marois et al of a porous carrier. However, after freeze-drying as

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suggested by Sudoma, the pellets of Marois et al will inherently be porous. The drying of Marois et al being optional does not mean that drying should be avoided or not carried out.

The arguments urge that Sudoma freeze-dries a mixture of pre-  
5 dried bacteria, non-moisture absorbing organic salt carrier and water  
absorbing silica gel absorbent. However, Sudoma does not disclose  
that the particular mixture used is required for freeze-drying to dry  
the cells for storage stability. As disclosed by Sudoma, the bacteria  
are freeze-dried before mixing with the other components (col 4, lines  
10 65-68, col 5, lines 1-25, and step (b) of claim 4 (col 10)).

***Claim Rejections - 35 USC § 103***

Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being  
unpatentable over the references as applied to claims 1, 2, 4-13, 16,  
18-21 and 41-43 above, and further in view of Elliott et al  
15 (5,030,562) or Pusey et al (4,764,371).

The claims require the microorganisms in the beads to be bacteria  
capable of controlling plant pathogens.

Elliott et al and Pusey et al disclose bacteria that control  
plant pathogens.

20 When freeze-drying the pellets of Marois et al as suggested by  
Sudoma as set forth above, it would have been obvious to replace the  
fungi in the pellets of Marois et al that control a soilborne disease  
with bacteria that control a plant pathogen as suggested by Elliott et  
al or Pusey et al to obtain the function of the bacteria for  
25 controlling a plant pathogen.

**Response to Arguments**

The arguments in the amendment urge that Elliott et al or Pusey et al do not suggest the porous freeze-dried beads of the present invention. However, Marois et al and Sudoma applied above suggest the porous freeze-dried beads of the invention. Elliott et al and Pusey et al are not relied on for suggesting porous-freeze dried beads.

**Conclusion**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David M. Naff whose telephone number is 571-272-0920. The examiner can normally be reached on Monday-Friday 9:30-6:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon Weber can be reached on 571-272-0925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

5 Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For  
10 more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system,  
15 call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



David M. Naff  
Primary Examiner  
Art Unit 1657

DMN

3/2/07